

Appl. No.: 10/757,838
Amdt. dated December 9, 2005
Reply to Office action of July 13, 2005

REMARKS

In response to a prior restriction requirement, Claims 1-10 and 21-26 were examined, while Claims 11-20 were withdrawn from consideration. Without prejudice to the subsequent filing of a divisional application directed to the non-elected claims, Claims 11-20 are now cancelled.

Of the elected claims, the Official Action rejected Claims 1-5, 7-10, 21, 22 and 24-26 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,793,527 to Yutaka Noro. Additionally, the Official Action rejected Claims 6 and 23 under 35 U.S.C. § 103(a) as being unpatentable over the Noro '527 patent in view of U.S. Patent No. 6,210,229 to Chin-Te Lai. As described below, independent Claims 1 and 21 have been amended to further patentably distinguish the claimed invention from the cited references, taken either individually or in combination. As a result of the amendment to independent Claim 1, Claim 8 has also been cancelled. In addition, independent Claims 27 is newly presented along with new dependent Claims 28 and 29 drawn to other unique aspects of the present invention. In light of the forgoing amendments and the following remarks, Applicants respectfully request reconsideration of the present application and the allowance of the current set of claims.

Independent Claim 1 is directed to an electrical connector insert that includes at least one housing, at least one flat wire segment having a plurality of conductive traces, and a plurality of connection elements. Each housing is defined by independent Claim 1 to include a plurality of openings to receive at least one connector portion of at least one component. For example, each housing may include a plurality of openings to receive the conductive pins that extend from a line replaceable unit (LRU) or other electrical device. Each housing of amended independent Claim 1 also includes a plurality of conductive contacts extending at least partially within the housing with each conductive contact being associated with a different respective opening. For example, the housing may include a plurality of conductive pins and/or conductive sockets with each conductive pin or conductive socket being associated with a different respective opening defined by the housing.

As now recited by amended independent Claim 1, each flat wire segment is proximate to the housing, but does not enter the housing. For example, the flat wire segments of the

embodiment depicted in Figures 2a and 2b extend along a support element to a location proximate to, but also external to, the housing. Similarly, the flat wire segments of the embodiments shown in Figures 3a and 3b extend across one face of the housing. In each of these embodiments, however, the flat wire segment remains external to the housing and, as such, does not enter the housing.

Further, the connection elements of the electrical connector insert of amended independent Claim 1 are defined to extend beyond the housing to connect the plurality of conductive contacts of the housing to the plurality of conductive traces of the flat wire segment. As the flat wire segment is proximate to the housing but does not enter the housing, the plurality of connection elements are now defined to extend beyond the housing to establish the desired connections.

The connector of the Noro '527 patent includes a shell 40 comprised of a base 41 and a lid 42 that are connected by a pair of coupling pieces 47. The connector also includes a housing 20 that carries a plurality of terminal members 21. The housing is designed to be mounted upon and engaged by the base 41. The connector of the Noro '527 patent also includes a flat cable 10n comprised of a plurality of shielded electric wires 11. The flat cable is mounted to the housing such that the insulation surrounding the electric wires is displaced in order to make electrical contact between the electric wires and respective terminal members 21. The housing also includes a cover that is folded over the terminal members so as to secure the distal ends of the electric wires to the terminal members.

However, the Noro '527 patents does not teach or suggest an electrical connector insert having at least one flat wire segment that is proximate to the housing, but that does not enter the housing, as recited by amended independent Claim 1. Instead, the flat cable of the Noro connector extends into the housing. Indeed, the positioning of the flat cable within the housing of the Noro connector is necessary in order to establish electrical contact between the terminal members mounted within the connector and the electric wires of the flat cable. Since the flat cable of the Noro connector extends into the housing in order to make the necessary electrical connections, the Noro '527 patent also fails to teach or suggest a plurality of connection elements extending beyond said housing to connect the plurality of conductive contacts of the housing to

the plurality of conductive traces of the flat wire segment, as also recited by amended independent Claim 1. Instead, the connection elements of the Noro connector are all disposed within the housing since such electrical connection is established within the housing as opposed to external to the housing, as now recited by amended independent Claim 1.

Still further, the Noro '527 patent does not teach or suggest the housing having a plurality of openings and a plurality of conductive contacts with each conductive contact being associated with a different respective opening of the housing as further recited by amended independent Claim 1. Instead, the connector of the Noro '527 patent defines a single, relatively broad opening through which each of the elongate terminals extend. Thus, each elongate terminal is not associated with a different respective opening as are the conductive contacts of the housing of the electrical connector insert of amended independent Claim 1.

For each of the foregoing reasons, it is submitted that the Noro '527 patent does not teach or suggest the electrical connector insert of amended independent Claim 1. It is also submitted that the secondary reference, i.e., the Lai '229 patent, does not teach or suggest an electrical connector insert having the foregoing distinguishing characteristics. In this regard, the Lai '229 patent was not cited for its disclosure relating to any of the foregoing characteristics of the electrical connector insert, but was, instead, cited for its disclosure of solder features that are the subject of several dependent claims. Thus, even if the cited references were to be combined, it is submitted that the combination of the references would likewise fail to teach or suggest the electrical connector insert of amended independent Claim 1 for each of the foregoing reasons.

Independent Claim 21 defines a method for fabricating electrical connector insert and has been amended to include comparable recitations to those highlighted above with respect to amended independent Claim 1. In this regard, the method of amended independent Claim 21 recites the step of "placing a plurality of conductive contacts at least partially within said housing such that a different conductive contact is disposed within each of the plurality of openings". As described above, neither of the cited references teaches or suggests placing a different conductive contact within each of a plurality of openings defined by the housing. The method of amended independent Claim 21 also recites the step of positioning at least one flat wire segment proximate to the housing without entering the housing. Correspondingly, the amended independent Claim

21 recites the extension of a plurality of connection elements beyond the housing to connect a plurality of conductive traces defined in at least one flat wire segment to the plurality of conductive contacts. As described above, the Noro '527 patent discloses the insertion of the flat cable into a housing such that the flat cable does not remain external to the housing. As a result of the flat cable extending into the housing, the Noro '527 patent only discloses that the connection elements are disposed within the connector, as opposed to extending beyond the housing so as to make the desired connections as also recited by amended independent Claim 21. For each of the reasons described above in more detail in conjunction with amended independent Claim 1, it is submitted that the method of amended independent Claim 21 is likewise not taught or suggested by the cited references, taken either individually or in combination.

The dependent claims include at least the recitations of a respective independent claim and are therefore patentably distinct from the cited references, taken either individually or in combination, for at least the same reasons as described above in conjunction with the independent claims. Thus, the rejections of Claims 1-10 and 21-26 are therefore overcome.

Independent Claim 27 drawn to an electrical connector insert is also newly presented. Independent Claim 27 defines the electrical connector insert to include at least one housing with each housing having a plurality of openings and a plurality of conductive contacts extending at least partially within the housing. As now recited by amended independent Claims 1 and 21, each conductive contact is associated with a different respective opening. As also described above in conjunction with amended independent Claims 1 and 21, neither of the cited references teach or suggest a housing defining a plurality of openings and having a plurality of conductive contacts with each conductive contact being associated with a different respective opening. The electrical connector insert of new independent Claim 27 also includes at least one flat wire segment and a support element extending outwardly from the housing to support at least a portion of the flat wire segment. Neither of the cited references teach or suggest a support element extending outwardly from the housing for supporting at least one flat wire segment. Instead, those portions of the flat cable that extend beyond the connector in the Noro '527 patent appear to be unsupported by any support element or otherwise, while the Lai '229 patent does not teach or suggest any type of flat wire segment that would extend beyond the connector. In

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contrast, the electrical connector insert of various embodiments of the present invention may include a wall or other support element that extends outwardly from the housing for providing support to that portion of the flat wire segment approximate to the housing. While the support provided by the support element may be useful for various purposes, a support may be useful for maintaining the relative position of the flat wire segment with respect to the housing which, in turn, improves the integrity of the electrical connection established with the flat wire segment external to the housing by the plurality of connection elements that are also set forth by new independent Claim 27. Thus, it is submitted that new independent Claim 27, as well as new dependent Claims 28 and 29, are not taught or suggested by the cited references, taken either individually or in combination.


CONCLUSION

In view of the amendments and remarks presented above, it is respectfully submitted that all of the claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

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It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

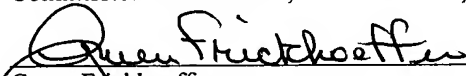


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